Draft EWA Water Quality Assessment: Feedback for the March 1999 Gaming

Constituents of concern: TDS, chloride, bromide, organic carbon

Scope of Assessment:
- Effect of enhanced water supply measures relative to existing conditions (DWRSIM study 802 with respect to 771).
- Effect of environmental water account operations relative to study with water supply measures (EWA increment).
- Water quality baseline is approximately the conditions that are provided by the 1994 Accord.

Outlier issues *(items that need integration in order to make a full assessment)*:
- Barriers in the south Delta (head of Old River, hydraulic barriers)
- CALFED water quality common programs (e.g., agricultural drainage re-location/treatment, land use changes)
- Delta cross channel operations

Preliminary results:
- TDS/Cl/Br: adjustments to outflow in the fall will affect salinity in the south Delta if the Delta has been in balance in the preceding months. Any operation which indirectly decreases outflow through reoperation (when outflow is below 5-10,000 cfs) could have adverse impacts on salinity. The possibilities of salinity reduction in exports and diversions resulting from Delta island storage need more study. TDS/Cl/Br concentrations at CCWD's intakes could be reduced through increased exports in high-outflow months depending on the timing and location of drainage events (more study needed).

- TOC: Bacon Island operations have the potential to increase TOC in exports due to the timing of the diversions to storage and the interaction between peat soils and shallow water storage. The extent of this effect needs to be studied in more detail. Webb Tract operations are more of a problem. In the gaming, water was stored for a longer period on Webb Tract (see figure 4) and the differential between diverted TOC in the water and the TOC in the receiving water is larger. More agencies are affected with this operation because water is released back to the Delta (i.e., not directly exported).

Issues to resolve for water quality analysis:
- More extensive study is needed as operation details become more refined;
- Existing/future land uses on Delta Islands must be bracketed and factored into analysis;
- Accumulation of TOC in stored water on peat Delta islands;
- Salinity-TOC tradeoffs (operations to reduce one may increase the other);
- Contributions of TOC loading from in-Delta storage at urban intakes;
- Effectiveness of water quality operation rules (in progress) and common programs.

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